Please check the examination details below before entering your candidate information	
Candidate surname	Other names
Centre Number	Candidate Number

Pearson Edexcel Level 3 GCE

Release date: Wednesday 1 September 2021
Submission date: Sunday 15 May 2022

	Paper Reference	9MT0/02

Music Technology

Advanced

COMPONENT 2: Technology-based composition Logbook and authentication form

You must have: The brief and video provided by Pearson on the website.

Instructions for Teachers

- The logbook and authentication form must be completed and presented for assessment along with the technology-based composition.
- Technology-based compositions must be submitted digitally in the format detailed in the Administrative Support Guide found on the Pearson website.
- Each candidate submission must be presented separately, and this must be clearly marked with the paper reference, centre number, candidate name and candidate number.
- Centres must retain backup copies of all technology-based compositions and proprietary software files.
- All assessment materials must be submitted by 15 May 2022.

Information for Candidates

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- The total mark for this component is 60.
- Complete the sections in the spaces provided. There may be more space than you need.
- Do not attach additional material.
- The sections in this booklet ask you for information which is essential for the examiner who assesses your work.
- If you do not complete the logbook and authentication form, your work may not be fully credited.

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Brief Chosen	Video composition
Title of your composition	
Kirby's Day Out	

Use the following tables to detail how you have created sounds for your technology-based composition.

Synthesis	
Timbre/instrument name	**Designing own sounds, manipulation using LFO, filter, envelopes, automation or real time control.**
'Stomach rumble'	Based on sine oscillator, with 3.3Hz LFO altering the cutoff to a quite extreme degree. Delay pattern created for every note played - contains 7 repeats, each with variable cutoff (with resonant peak), and variable panning. A slower release put onto the synth to ensure the stomach rumble occurs a few seconds after the note was played. Created strange stomach rumbling sound to match the character in video.
Chorus lead	Combines a sine oscillator with a triangle wave. Cutoff at roughly 50%. 25Hz LFO used to modulate pitch to create a 'wobble' - a 'random wave' used to make the synth sound subtly shake. 20Hz LFO used to modulate cutoff.
'Flying' noise	Uses a pure triangle oscillator. Cutoff at roughly 40%, with an LFO controlling both pitch and cutoff (very slightly). Slow attack (1500ms) added to make sound 'fade in'. Creates a sound like a helicopter propellor to mirror the flying object in the video. After roughly 2 seconds, another LFO is automated to enter - randomly controlling pitch with increasing extremity. Causes sound to decay into random digital noise as it fades out.
Random machine bleeps	Uses a combined triangle and square oscillator, using an LFO randomly controlling pitch to create the random noise at the start. Fast attack.
Dirty robot noises	Uses sawtooth wave synth with cutoff at roughly 60%. Downsampled to 1bit to create harsh noise that accompanies the movement of the purple robots at the end.

Sweep at end	Uses a triangle wave synth with roughly 35% cutoff. A very slow (0.26Hz) rising LFO creates a pitch rise, acting as a sweep. Also contains a slight resonant peak.
Explosion 1	Based on a 'retro' FM synth. 0.94Hz LFO controlling the cutoff of a low pass filter, with a significant resonant peak.

Sampling	
Timbre/instrument name	**Using short audio files to develop new sonic elements; pitch-mapping, cutting/trimming, looping.**
Orchestra bells	A sample of a church bell was taken. High amounts of compression added, with resolution decreased to 4 bits. EQ automated with extreme resonance to move upwards. Creates machine noise that also accompanies movement of the robots.
Clarinet solo	Sample of a dixieland style clarinet solo taken. Pitch editing used to change the key and melody of the sample to match the chord changes of the song. Sample was also slowed down to match the tempo. One specific phrase of the solo was removed, reversed, and pitch shifted up 19 semitones. Copious amounts of reverb and an echo delay added to create a ‘sparkly’ effect to this section of the solo. The ending note of the solo was looped using a delay. The delay time was automated to increase over the next two bars, to create a (disturbing) ‘siren’ effect during the buildup to the hours section.
Vocoder in buildup	A small section from the reading of a poem was sampled and shifted up an octave. The pitch of every word was then robotically shifted to the one note using a vocal pitch shifter. This was then placed into a sampler, which created a vocoder-style synth using these words. A melody was then sequenced for the two bars of the buildup. A distorter, ‘bass enhancer’, compressor and tremolo was added to make an extremely unnatural sound. A limiter was then placed afterwards to stop digital clipping. A slight reverb was then added, along with a ‘bitcrusher’ to take down the track to 8bits.

Brass section	A sample of a contemporary brass band was taken. The sample was slowed down to match the tempo of the song, and the pitch was altered to match the chord changes - this was achieved by cutting and positioning certain parts of the brass to match each chord. A band-pass EQ was placed on top for creative effect.
Intro vocal	A sample of a single note sung by a vocalist was taken. This was pitch corrected by -16 cents. This was then pitch shifted up 12 semitones, and formant shifted up 13 semitones. This sample was down-sampled by a degree of 19x, and automation was used to decrease this slowly. Created the effect of a vocal sound being slowly faded into existence from noise. A stereo-spreading tremolo was also added to make the vocal more 'choppy' - and this was automated to increase during the intro.
Explosion 2	Samples of puppies howling taken, and each loaded into an empty sampler. The pitch of each howl is altered to provide range, and sequenced into a pattern using a MIDI region. The pattern is intended to match the explosion on the video. Light compression, a high pass filter at 250Hz, and a light reverb were also added.

Creative effects	
Timbre/instrument name	**Adding effects or processors to modify existing sounds; control of parameters.**
Tempo changes on whole track	The first 20 bars of the track are at 110bpm, which then increases to 113bpm for the next 4 bars. For the next 25 bars, the tempo quickly (but gradually) increases to 123bpm. The final 4 bars of the track move down to 111bpm.
'Flying' noise	Binaural panning used to give a more 'realistic' sonic image of the flying object in the video. Automation used to pan this from left to right - also mirroring the movement of the object in the video.
Funk guitar	At the start, a funk guitar was recorded. The attack of the guitar sample was slowed slightly with an enveloper, and put through an amp sim. A small 'tweed' cab sim was used.

Filtering during buildup	In the two bars of buildup before the chorus, a sudden low pass filter enters with automation, dropping the cutoff to roughly 50Hz. This then moves back up to 20kHz and turns off to ‘reveal’ the chorus section. A slight bit of the synthesised ‘machine noise’ remains in this section, unaffected by the filter. This was achieved by placing the machine noise on an alternative output to the rest of the track, to bypass the filter for creative effect.
Reversed ending	One specific bar (bar 8) of the track was exported, and placed at the end of the song. This was then slowed down so it is four times slower than the original speed, and reversed - so that it occupied the last 4 bars of the track. This mirrored the animation, in which the viewpoint was zooming away from the characters.
Reverb on the samples	Reverb was added to various samples to make them less dry and add ambience - which was especially needed if the samples were of low quality. The clarinet solo used a reverb setting with 24% wet, and exemplified ‘high’ frequency reflections to create an ‘airy’ reverb. The brass section used a reverb setting with 30% wet, and a high ‘distance’ setting to create the idea of a smooth space.
Panning on the brass	The last 4 chords of the brass section move back and forth between left and right - using automation. To make this more subtle, the panning was not hard left and right, it was more ‘halfway’.
Video game and vinyl panning	During the start, when the character is seen playing a video game, an 8bit synth phrase was added - the rhythm and pitch sounding slightly like the theme to ‘Super Mario’. This was panned binaurally to make it more realistic, and automation was used to make the panning follow the slight camera movement in the video. This was also done to the vinyl scratch sound effect, where the character is seen using a record player.
Explosion 1	Fuzz pedal sim used, with 25% wet signal, along with light compression (ratio: 2.5:1). Two delay patches programmed - one which rises in pitch for every semiquaver repeat, and one which falls in pitch for every semiquaver repeat. An EQ is then applied to remove unwanted lows using a high-pass filter (cutoff 250Hz). A fairly significant high shelf and a 'treble exciter' is also applied for vibrancy. A light reverb is also applied, along with automated binaural panning which alters both angle and distance - to mirror the video

State any parts played by other performers and details of how you directed the performance		
Instrument/Part	**How you directed the performance**	**Editing and manipulation of recorded audio/MIDI**
Funk guitar	Guitarist was given the chord progression and style. The guitarist played over the song to keep time.	Slight rhythm quantisation used, along with an enveloper to slow the slightly harsh attack.
Bass guitar in ending	Bassist was given the chord progression and general style. They then improvised over several takes, and the desired take was then used.	A bass amp sim was used, along with slight distortion and a ‘bass enhancer’ plugin.